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Nakagawa et al.

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(54) **CASING OF OUTDOOR UNIT IN AIR CONDITIONING DEVICE**

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See application file for complete search history.

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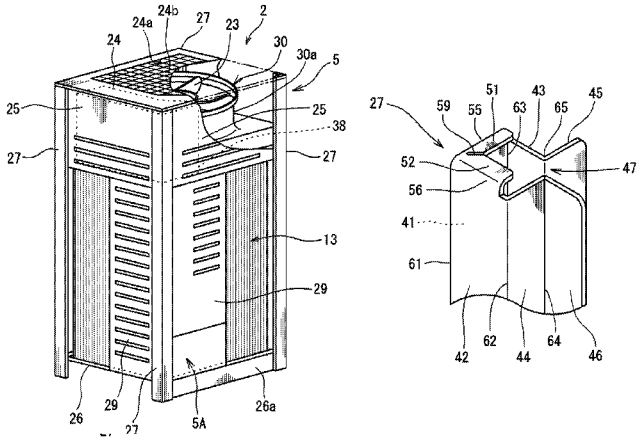
(57) **ABSTRACT**

A casing of an outdoor unit includes support pillars, each of the support pillars having standing wall portions arranged along the up and down direction, and a top plate mounted on upper ends of the support pillars. Substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower surface of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars.

4 Claims, 9 Drawing Sheets



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F24F 1/56 (2011.01)
F24F 1/50 (2011.01)

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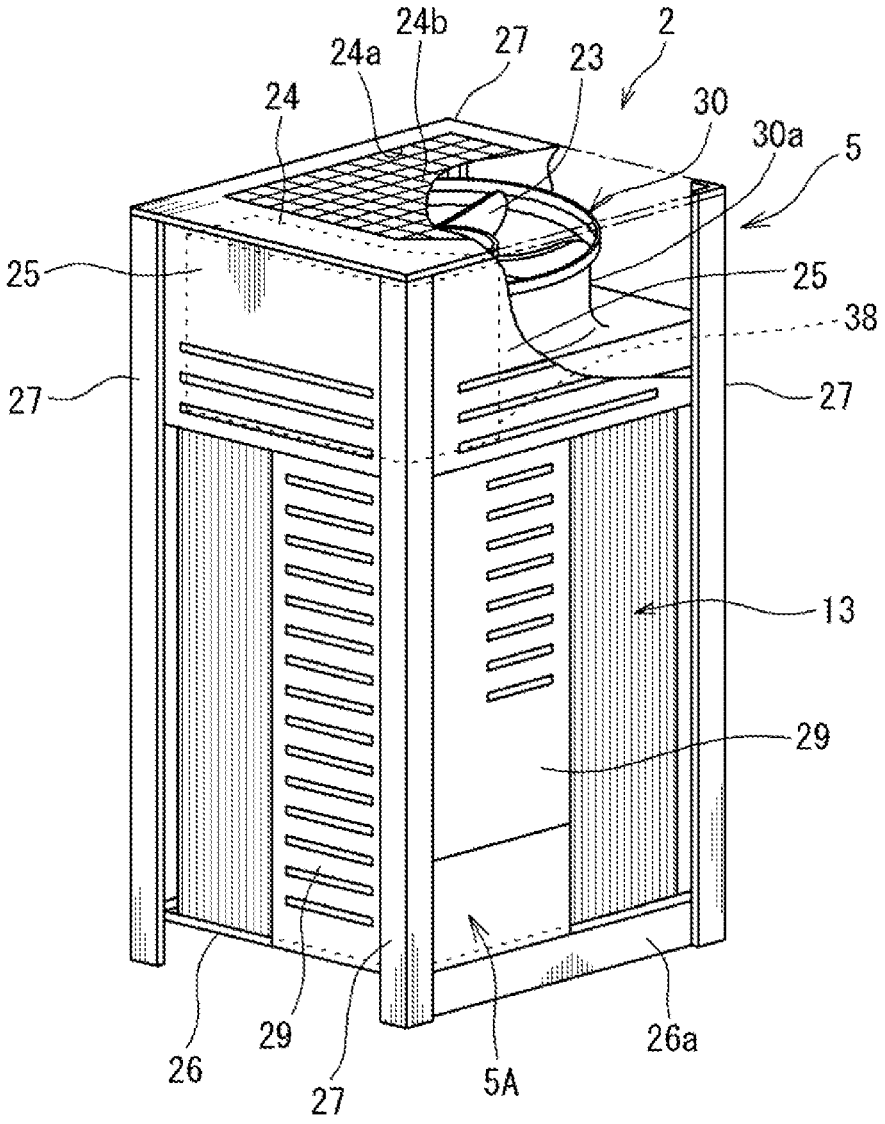
FIG. 1



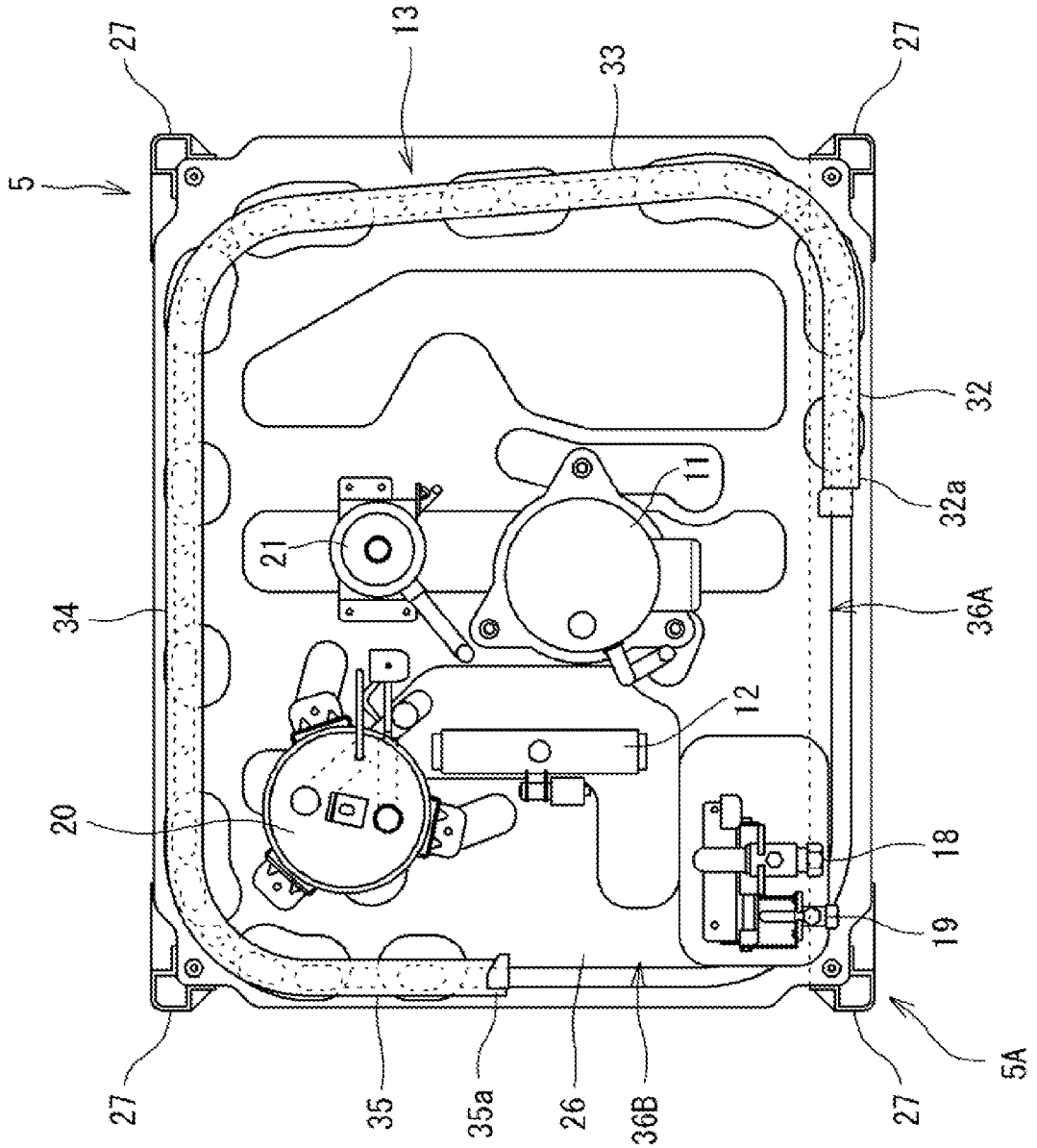


FIG. 2

FIG. 3

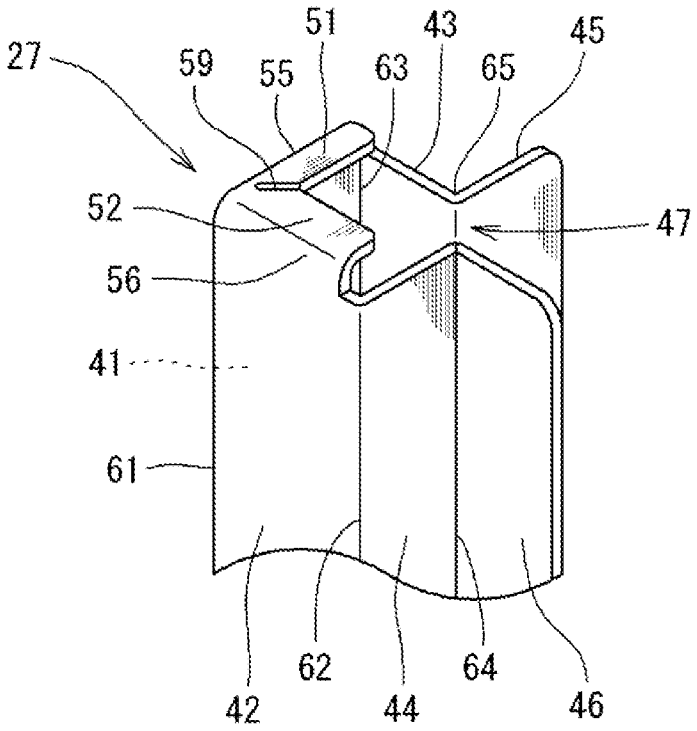


FIG. 4

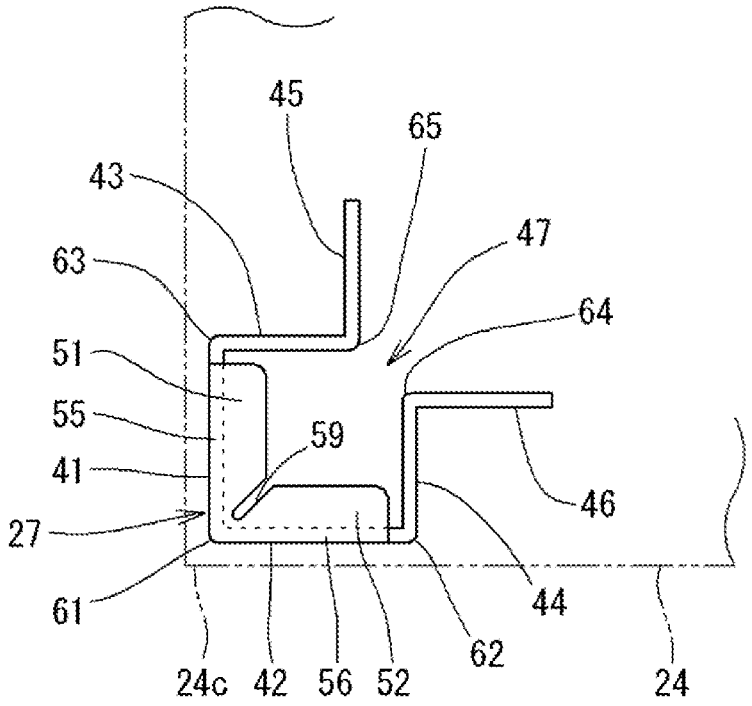


FIG. 5

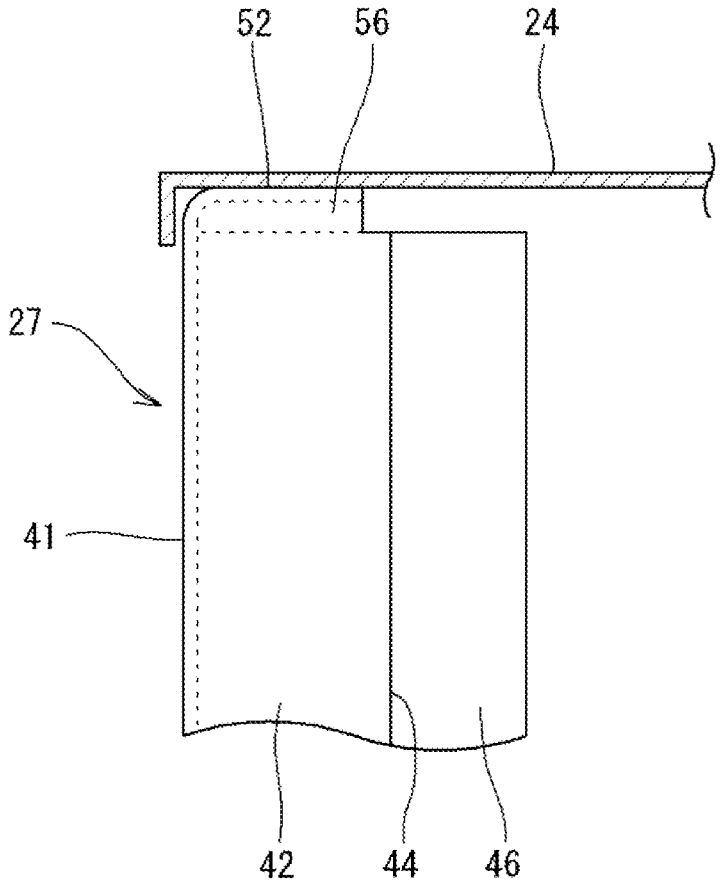


FIG. 6

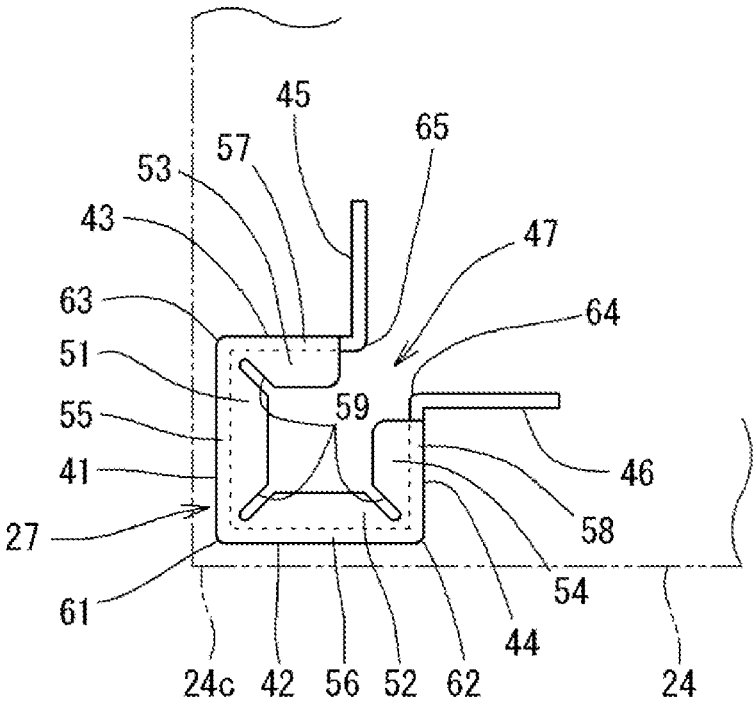


FIG. 7

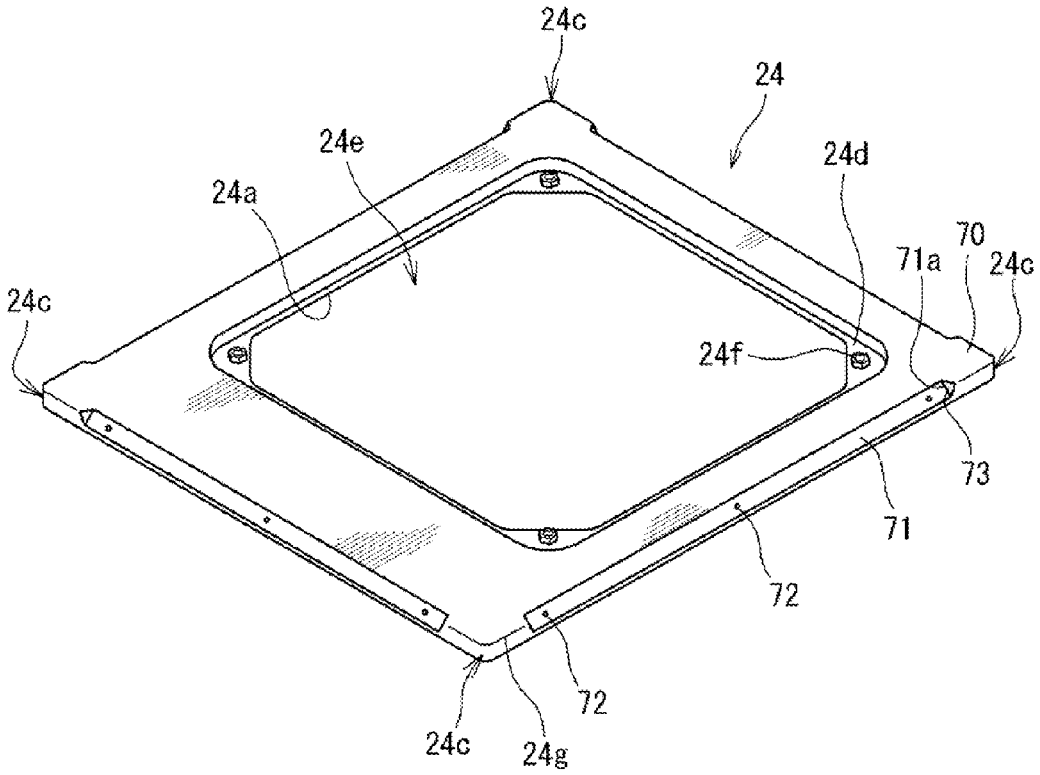


FIG. 8

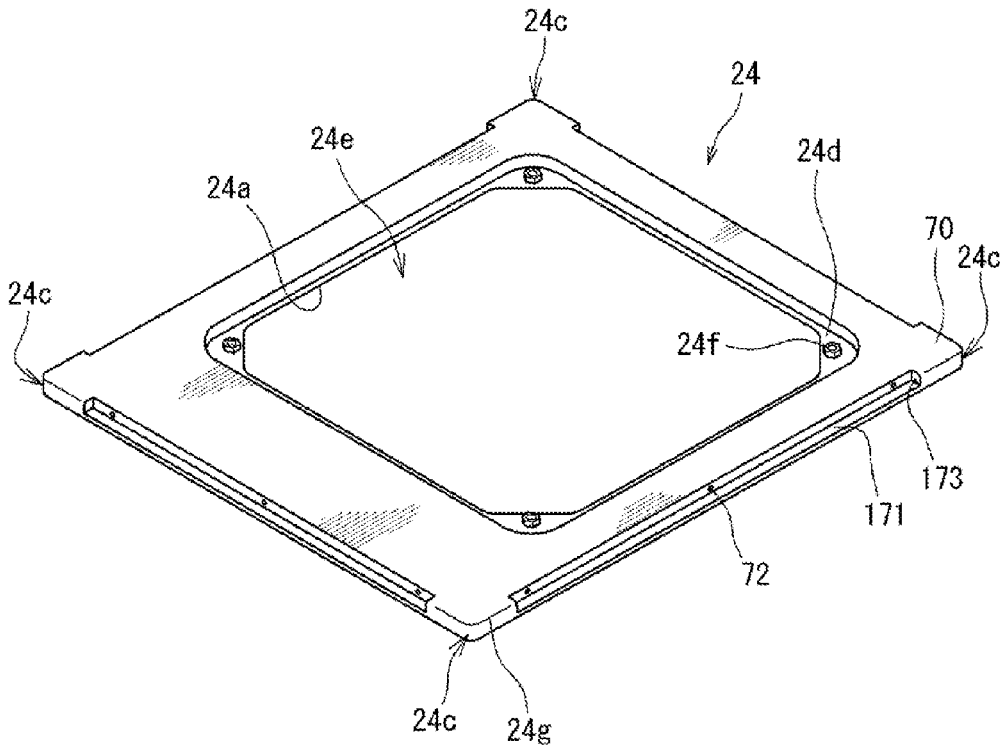


FIG. 9A

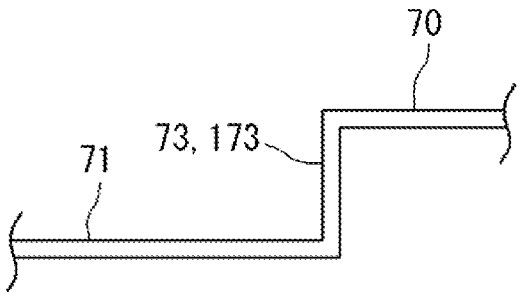


FIG. 9B

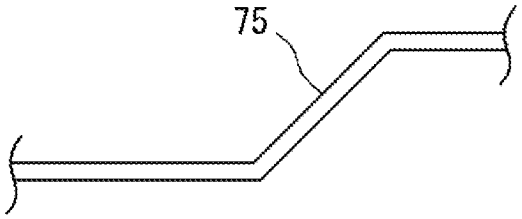
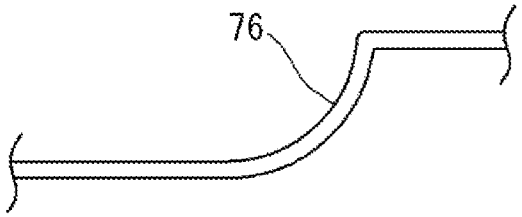


FIG. 9C



CASING OF OUTDOOR UNIT IN AIR CONDITIONING DEVICE

TECHNICAL FIELD

The present invention relates to a casing of an outdoor unit in an air conditioning device.

BACKGROUND ART

As an air conditioning device utilized in a structure such as a building or a general residence, a separate type air conditioning device including an indoor unit and an outdoor unit is widely used. In the outdoor unit of the separate type air conditioning device, for example, as described in Patent Literature 1 to be described below, various devices such as a compressor and a heat exchanger are accommodated inside a casing. The casing of the outdoor unit includes a bottom plate on which various devices are mounted, a plurality of support pillars standing on this bottom plate, a top plate coupled to upper ends of the support pillars, and side surface panels for closing openings between the support pillars.

CITATION LIST

Patent Literature

Patent Literature 1: Japanese Unexamined Patent Publication No. 2009-127991

SUMMARY OF INVENTION

Technical Problem

The outdoor unit as described above is sometimes stacked up in the up and down direction at the time of storage in a warehouse or the like. At this time, a load of the outdoor unit arranged on the upper side is applied downward to the top plate of the casing of the outdoor unit arranged on the lower side. This load is exclusively supported by the support pillars.

However, the support pillars are bent into a square shape, an L shape, or the like in a plan view, and upper end surfaces having a small area of the square shape or the L shape are in contact with the top plate. Thus, contact parts of the top plate receive a large pressure from the support pillars. Particularly, since bent parts (bending parts) of the square shape or the L shape in the support pillars are in contact with the top plate, there is a fear that the stress is concentrated and an impression or deformation is generated.

The present invention is achieved in consideration with the situation described above, and an object thereof is to provide a casing of an outdoor unit capable of suppressing stress concentration generated in a top plate by a force received from support pillars.

Solution to Problem

(1) The present invention is a casing of an outdoor unit including support pillars, each of the support pillars having standing wall portions arranged along the up and down direction, and a top plate mounted on upper ends of the support pillars, wherein

substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower surface of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars.

According to the casing with the above configuration, the substantially horizontal abutment portions brought into surface contact with the lower surface of the top plate in a state where the top plate is floated up from the upper ends of the standing wall portions are provided in the upper end of each of the support pillars. Thus, a contact area of the support pillars with the top plate can be increased, and a pressure that the top plate receives from the support pillars can be reduced as far as possible, so that stress concentration generated in the top plate can be suppressed. Further, the abutment portions extend upward from the standing wall portions. Thus, the abutment portions can be integrated with the standing wall portions, so that an increase in the number of parts can be suppressed.

(2) Preferably, buffer portions for easing an impact received from the top plate side are provided between the standing wall portions and the abutment portions.

By providing such buffer portions, even when a strong impact is added to the top plate at the time of stacking the outdoor unit or the like, the impact is eased on the support pillars side, so that generation of excessive stress in the top plate can be suppressed.

(3) Preferably, the buffer portions are formed by curving border portions between the standing wall portions and the abutment portions into a round shape.

Thereby, the buffer portions can be provided with a simple configuration.

(4) Preferably, each of the support pillars has two standing wall portions arranged to match a corner portion of the top plate, and the abutment portions extend from the two standing wall portions.

In such a way, since the abutment portions extend from the two standing wall portions arranged to match the corner portion of the top plate having relatively high strength, deformation or the like of the part of the top plate in surface contact with the abutment portions can be prevented.

(5) Preferably, each of the support pillars has four standing wall portions arranged in a substantially square form in a plan view, two standing wall portions among the standing wall portions are arranged to match a corner portion of the top plate, and the abutment portions extend from the two standing wall portions arranged to match the corner portion of the top plate.

In such a way, since the abutment portions extend from the two standing wall portions arranged to match the corner portion of the top plate having relatively high strength, the deformation or the like of the part of the top plate in surface contact with the abutment portions can be prevented. The upper ends of the two standing wall portions other than the two standing wall portions arranged to match the corner portion of the top plate are also not brought into direct contact with the top plate. Thus, the generation of the stress concentration in the top plate due to contact of the upper ends can be prevented.

(6) Preferably, the top plate is formed in a square shape in a plan view, a flat mount portion is formed in the corner portion of the top plate,

regarding each of sides of the top plate, an intermediate part excluding the corner portion serves as a retreat portion set back to the device side,

an end of the retreat portion and the mount portion are connected by a standing portion, and

the abutment portions of each of the support pillars are in surface contact with a lower surface of the mount portion.

In the top plate having the above configuration, the retreat portion set back to the device side is provided in the interme-

diate part of the side. Thus, by forming an insertion hole of a screw or a bolt in this retreat portion and fixing the top plate by using this insertion hole, even in a case where a plurality of outdoor units are arranged in a closely-set manner at the time of transportation or at the time of storage, a head part of the screw or the bolt is not butted with the neighboring outdoor unit between the adjacent outdoor units. The flat mount portion is formed in the corner portion of the top plate, and the end of the retreat portion and the mount portion are connected by the standing portion. Therefore, even in a case where a plurality of outdoor units are stacked and stored, a load from the upper outdoor unit can be received by the flat mount portion, and withstand load of the mount portion can be increased by the standing portion functioning as a rib. Therefore, a buffer member arranged between the upper outdoor unit and the lower outdoor unit can be simplified, so that storage cost can be lowered.

Advantageous Effects of Invention

According to the present invention, the stress concentration generated in the top plate by a force received from the support pillars can be suppressed.

BRIEF DESCRIPTION OF DRAWINGS

FIG. **1** is a perspective view schematically showing an outer appearance and an interior of a part of an outdoor unit of an air conditioning device according to a first embodiment of the present invention.

FIG. **2** is a plan view showing the interior of the outdoor unit.

FIG. **3** is a perspective view showing an upper part of a support pillar of a casing in the outdoor unit.

FIG. **4** is a plan view of the support pillar.

FIG. **5** is a front view of the support pillar.

FIG. **6** is a plan view of a support pillar in a second embodiment of the present invention.

FIG. **7** is a perspective view showing a top plate in a third embodiment of the present invention.

FIG. **8** is a perspective view showing a top plate in a fourth embodiment of the present invention.

FIGS. **9**(*a*) to **9**(*c*) are illustrative sectional views of a standing portion of the top plate.

DESCRIPTION OF EMBODIMENTS

FIG. **1** is a perspective view schematically showing an outer appearance and an interior of a part of an outdoor unit of an air conditioning device according to a first embodiment of the present invention, and FIG. **2** is a plan view showing the interior of the outdoor unit.

An outdoor unit **2** of the present embodiment is used in for example a multiple type air conditioning device for a building, and includes a casing (outdoor unit main body) **5**, devices such as an outdoor heat exchanger **13**, a compressor **11**, a four way valve **12**, an accumulator **20**, and an oil separator **21**, which are built in this casing **5** and forming a refrigerant circuit, an electric component unit **38**, and a fan **23**. The outdoor unit **2** is an upward blowing type in which the air is suctioned from a side surface of the casing **5** by driving the fan **23**, heat exchange is performed with the outdoor heat exchanger **13**, and then the air is blown out upward from an upper part of the casing **5**.

The casing **5** is formed into a substantially cubic shape, and has a bottom frame **26**, support pillars **27**, lower side surface panels **29**, upper side surface panels **25**, a top plate **24**, and the like. The bottom frame **26** is formed into a square shape in a plan view. Leg portions **26***a* connected to the ground are provided in two sides facing front and rear side parts. The support pillars **27** are formed by a long member elongated in the up and down direction, and attached to four corners of the bottom frame **26** by bolts or the like. It should be noted that although FIG. **1** shows a state where the shape of the support pillars **27** is simplified (with substantially L shape sections), the support pillars **27** of the present embodiment are formed in a shape shown in FIGS. **2** to **5**. A detailed structure of the support pillars **27** will be described later.

As shown in FIG. **1**, the top plate **24** is formed into a square shape in a plan view which is the substantially same as the bottom frame **26**, and arranged so as to have a gap above the bottom frame **26**. Four corners of the top plate **24** are mounted on upper ends of the support pillars **27**, and the top plate **24** is coupled to the upper side surface panels **25** and the like by coupling tools such as bolts. A substantially square ventilating hole **24***a* is formed in the top plate **24**, and a grille **24***b* for preventing invasion of foreign substances is provided in this ventilating hole **24***a*.

A bell mouth **30** is attached to an upper part of the casing **5**. This bell mouth **30** has a ventilating guide (ventilating member) **30***a* surrounding an outer circumference part of the fan **23**. The ventilating guide **30***a* is formed into a cylindrical shape along a circular rotation trajectory of the fan **23**, to form a blow-out port of the air from the casing **5**.

The upper side surface panels **25** are provided on four side surfaces of the casing **5** around the bell mouth **30**. The fan **23**, the bell mouth **30**, and the electric component unit **38** are covered by the upper side surface panels **25** and the top plate **24** so as not to be exposed to an exterior.

As shown in FIG. **2**, the devices such as the outdoor heat exchanger **13**, the compressor **11**, stop valves **18** and **19**, the accumulator **20**, the oil separator **21**, and the four way valve **12** are mounted on the bottom frame **26** of the casing **5**. The outdoor heat exchanger **13** is of a cross fin coil type in which a heat transfer tube horizontally passes through a large number of aluminum fins and the heat exchange is performed between a refrigerant flowing through the heat transfer tube and the air circulated in the outdoor heat exchanger **13**.

The outdoor heat exchanger **13** is bent in a substantially square shape so as to face (correspond to) the four side surfaces in a range excluding one corner portion (left front corner portion) **5**A of the casing **5** along the four side surfaces. Specifically, the outdoor heat exchanger **13** has a front heat exchange portion **32** along the side surface on the front side of the casing **5** (front surface), a right heat exchange portion **33** along the side surface on the right side, a rear heat exchange portion **34** along the side surface on the rear side (rear surface), and a left heat exchange portion **35** along the side surface on the left side. A part between the front heat exchange portion **32** and the right heat exchange portion **33**, a part between the right heat exchange portion **33** and the rear heat exchange portion **34**, and a part between the rear heat exchange portion **34** and the left heat exchange portion **35** are bent at substantially 90 degrees.

The casing **5** includes opening portions **36**A and **36**B to be openably closed by the lower side surface panels **29** (refer to FIG. **1**) between one side end portion **32***a* of the outdoor heat exchanger **13** (left end portion of the front heat exchange portion **32**) and the left front support pillar **27**, and between this support pillar **27** and the other side end portion **35***a* of the outdoor heat exchanger **13** (front end portion of the left heat exchange portion **35**), respectively.

The stop valves **18** and **19** are supported via an attachment base so as to face the front opening portion **36**A of the casing

5. The compressor **11** is arranged closely to a right side part of the front opening portion **36**A at such a position that the substantially entire compressor can be visually recognized from the front side via the front opening portion **36**A. The accumulator **20** and the oil separator **21** on the bottom frame **26** are arranged on the rear part side in the casing **5**.

FIG. **3** is an enlarged perspective view showing an upper part of the support pillar of the casing in the outdoor unit, FIG. **4** is a plan view of the support pillar, and FIG. **5** is a front view of the support pillar.

Each of the support pillars **27** includes a plurality of standing wall portions **41** to **46** arranged along the up and down direction. Specifically, the support pillar **27** has first to fourth standing wall portions **41** to **44** arranged in a substantially square form in a plan view. The first and second standing wall portions **41** and **42** are bent at substantially 90 degrees with respect to each other, and arranged to match a corner portion **24***c* of the top plate **24**. The third standing wall portion **43** is bent at substantially 90 degrees with respect to the first standing wall portion **41**, so as to face the second standing wall portion **42** in substantially parallel. The fourth standing wall portion **44** is bent at substantially 90 degrees with respect to the second standing wall portion **42**, so as to face the first standing wall portion **41** in substantially parallel. An opening **47** is formed between the third standing wall portion **43** and the fourth standing wall portion **44**.

Further, the support pillar **27** has fifth and sixth standing wall portions **45** and **46**. The fifth standing wall portion **45** is bent at substantially 90 degrees with respect to the third standing wall portion **43**, and arranged in substantially parallel to the first standing wall portion **41**. The sixth standing wall portion **46** is bent at substantially 90 degrees with respect to the fourth standing wall portion **44**, and arranged in substantially parallel to the second standing wall portion **42**. The fifth and sixth standing wall portions **45** and **46** serve as attachment portions at the time of attaching the bottom frame **26**, the side surface panels **25** and **29**, and the like to the support pillar **27**.

A first abutment portion **51** extends in an upper end of the first standing wall portion **41**. This first abutment portion **51** is bent at substantially 90 degrees with respect to the first standing wall portion **41**, and arranged substantially horizontally. A second abutment portion **52** extends in an upper end of the second standing wall portion **42**. This second abutment portion **52** is bent at substantially 90 degrees with respect to the second standing wall portion **42**, and arranged substantially horizontally. The top plate **24** is mounted on upper surfaces of the first and second abutment portions **51** and **52** so as to be supported by the support pillar **27**. That is, due to the first and second abutment portions **51** and **52**, the top plate **24** is not brought into direct contact with upper ends of the standing wall portions **41** to **46** but supported in a state where the top plate is floated up from the upper ends.

A border portion **55** between the first standing wall portion **41** and the first abutment portion **51**, and a border portion **56** between the second standing wall portion **42** and the second abutment portion **52** are curved in a round shape. By this structure, the first abutment portion **51** and the second abutment portion **52** are easily elastically deformed in the up and down direction. Since these border portions **55** and **56** are formed in a round shape, no sharp edges are created, so that the border portions **55** and **56** are not directly abutted with the top plate **24**.

A cut **59** is formed between the first abutment portion **51** and the second abutment portion **52**. The border portions **55** and **56** are formed in such a shape that the portions are continuous to each other.

The above outdoor units **2** are sometimes stacked in the up and down direction for example at the time of storage in a warehouse or the like. At this time, a downward load is applied to the top plate **24** of the outdoor unit **2** arranged on the lower side, and the top plate **24** receives an upward load from the support pillars **27** as a reactive force against the downward load. The top plate **24** of the outdoor unit **2** is mounted on the substantially horizontal first and second abutment portions **51** and **52**, and brought into surface contact with the first and second abutment portions **51** and **52**, so that a contact area between the top plate and the support pillars **27** is increased. Therefore, even when the upward load (reactive force) is received from the support pillars **27**, a pressure applied to the top plate **24** can be decreased, so that stress concentration generated in the top plate **24** can be suppressed.

Bent portions **61** to **65** are formed between the standing wall portions **41** to **46** of the support pillar **27**. The stress is easily concentrated particularly in a part of the top plate **24** in contact with these bent portions **61** to **65**. However, since the top plate **24** is floated up from the upper ends of the standing wall portions **41** to **46** of the support pillar **27** in the present embodiment, the top plate is also not brought into contact with the bent portions **61** to **65**. Therefore, the stress concentration can be effectively suppressed.

The border portions **55** and **56** between the first and second standing wall portions **41** and **42** and the first and second abutment portions **51** and **52** are formed to be curved in a round shape, and the first and second abutment portions **51** and **52** are easily elastically deformed in the up and down direction. Thus, even in a case where a large impact is applied to the top plate **24** at the time of stacking the outdoor unit **2** or the like, the impact is eased by elastic deformation of the first and second abutment portions **51** and **52**, so that deformation and damage of the top plate **24** can be prevented. The border portions **55** and **56** between the first and second standing wall portions **41** and **42** and the first and second abutment portions **51** and **52** function as buffer portions for easing the impact applied to the top plate **24**. Since the cut **59** is formed between the first and second abutment portions **51** and **52**, the first and second abutment portions **51** and **52** are more easily elastically deformed in the up and down direction, so that the function of easing the impact applied to the top plate **24** is enhanced.

The first and second abutment portions **51** and **52** extend from the first and second standing wall portions **41** and **42** arranged to match the corner portion **24***c* of the top plate **24** having relatively high strength. Thus, the deformation and the like of the top plate **24** in the part in surface contact with the first and second abutment portions **51** and **52** can be favorably prevented.

It should be noted that in a case where a plurality of outdoor units **2** are stacked, a buffer member for easing the impact is generally inserted between both the outdoor units. However, since the border portions **55** and **56** functioning as the buffer portions are provided in the support pillars **27** as described above, thickness of the buffer member can be reduced and the structure can be simplified.

FIG. **6** is a plan view of a support pillar in a second embodiment of the present invention. In the present embodiment, not only in the first and second standing wall portions **41** and **42** of the support pillar **27** but also in the third and fourth standing wall portions **43** and **44**, abutment portions (third and fourth abutment portions) **53** and **54** are provided. Therefore, the contact area between the support pillar **27** and the top plate **24** is increased more than the first embodiment, so that the stress concentration is more reduced. Border portions **57** and **58** between the third and fourth standing wall portions **43** and **44**

and the third and fourth abutment portions **53** and **54** are curved in a round shape. Therefore, the effect of easing the impact received by the top plate **24** is more improved.

FIG. **7** is a perspective view showing a top plate in a third embodiment of the present invention.

A bottom portion **24***d* slightly lower than a surface of the top plate **24** is formed in a peripheral edge of the ventilating port **24***a* of the top plate **24** in this example. A recess **24***e* is formed by this bottom portion **24***d*. Nuts **24***f* are secured to four corners of this bottom portion **24***d*, and the grille **24***b* (refer to FIG. **1**) is arranged in the recess **24***e* by using the nuts **24***f* and bolts (not shown).

Flat mount portions **70** are formed in the four corner portions **24***c* of the top plate **24**. Regarding each of sides of the top plate **24**, an intermediate part excluding the corner portions **24***c* of the top plate **24**, in other words, a part between the mount portions **70** on both ends of the side is an inclined surface **71** serving as a retreat portion. This "retreat portion" is a part whose surface is set back to the device interior side from edges **24***g* of the corner portions **24***c* of the top plate **24**. A space formed by this set-back is not butted with the closely arranged other outdoor unit.

Insertion holes **72** for screws are formed on the inclined surface **71** at predetermined intervals, and the top plate **24** is attached to an upper edge of the upper side surface panel **25** with the screws (not shown) by utilizing the insertion holes **72**. It should be noted that the upper edge of the upper side surface panel **25** is bent inward in correspondence with inclination of the inclined surface **71** of the top plate **24**. Head parts of the screws are placed in the set-back space of the inclined surface **71**. Thus, even in a case where the plurality of outdoor units are transported and stored in a closely-set manner, the head parts of the screws are not butted with the casing of the adjacent outdoor unit. Even in a case where the buffer member is inserted between the plurality of outdoor units, there is no need for forming a part of absorbing the head parts of the screws in this buffer member. Thus, the buffer member can be simplified and formed in an uncomplicated shape.

The mount portion **70** formed in each of the corner portions **24***c* of the top plate **24**, and an end **71***a* of the inclined surface **71** are connected by a standing portion including a substantially triangle vertical surface **73**. The flat mount portion **70** can receive a load in the vertical direction and the vertical surface **73** functions as a rib. Thus, withstand load of the top plate **24** can be increased. Therefore, in a case where the plurality of outdoor units **2** are stacked and stored, there is no need for inserting a thick buffer member between both the outdoor units, so that the buffer member can be simplified and formed in an uncomplicated shape. As a result, cost of the buffer member can be reduced, so that storage cost of the outdoor unit **2** can be reduced.

FIG. **8** is a perspective view showing a top plate in a fourth embodiment of the present invention.

In the top plate **24** of this embodiment, the retreat portion between the corner portions **24***c* is formed, not in the inclined surface **71** as in the third embodiment, but in a step portion **171** bent at substantially 90 degrees. Therefore, as well as the third embodiment, butting with the head parts of the screws inserted into the insertion holes **72** can be prevented. In the present embodiment, a substantially square vertical surface **173** is adopted as a standing portion for connecting an end of the retreat portion **171** and the mount portion **70**.

In the above third and fourth embodiments, the standing portion is formed by the vertical surface **73** or **173** which is substantially vertical to the mount portion **70** (refer to FIG. **9**(*a*)). However, in addition, an inclined surface **75** shown in FIG. **9**(*b*) or a rounded surface **76** shown in FIG. **9**(*c*) can serve as the standing portion. The inclined surface **75** and the rounded surface **76** function as ribs and contribute to an increase in withstand load of the mount portion **70**.

The present invention is not limited to the above embodiments but can be appropriately changed within the scope of the invention described in the claims.

For example, the shape of the support pillar **27** is not limited to the above embodiments but can be appropriately changed. For example, the fifth and sixth standing wall portions **45** and **46** can be omitted from the support pillar **27**. The support pillar **27** can also be formed in a square tube shape in which no opening **47** is provided by omitting the fifth and sixth standing wall portions **45** and **46** and connecting the third standing wall portion **43** and the fourth standing wall portion **44**. The support pillar **27** can also be formed in a shape including only the first and second standing wall portions **41** and **42** (substantially L shape in a plan view).

In any case, the abutment portion can extend from at least one standing wall portion. However, in order to sufficiently ensure the contact area with the top plate **24**, the abutment portions preferably extend from two or more standing wall portions.

In the above embodiments, the abutment portions **51** to **54** are bent toward the inner side of the standing wall portions **41** to **44**. However, the abutment portions may be bent toward the outer side.

The present invention is not limited to the upward blowing type outdoor unit **2** but can be applied to any outdoor unit including the casing **5** which has the support pillars **27** and the top plate **24**.

REFERENCE SIGNS LIST

2: OUTDOOR UNIT
5: CASING
24: TOP PLATE
24*c*: CORNER PORTION
27: SUPPORT PILLAR
41: FIRST STANDING WALL PORTION
42: SECOND STANDING WALL PORTION
43: THIRD STANDING WALL PORTION
44: FOURTH STANDING WALL PORTION
45: FIFTH STANDING WALL PORTION
46: SIXTH STANDING WALL PORTION
51: FIRST ABUTMENT PORTION
52: SECOND ABUTMENT PORTION
53: THIRD ABUTMENT PORTION
54: FOURTH ABUTMENT PORTION
55 to **58**: BORDER PORTION (BUFFER PORTION)
70: MOUNT PORTION
71: INCLINED SURFACE (RETREAT PORTION)
73: VERTICAL SURFACE (STANDING PORTION)
75: INCLINED SURFACE (STANDING PORTION)
76: ROUNDED SURFACE (STANDING PORTION)
171: STEP PORTION (RETREAT PORTION)
173: VERTICAL SURFACE (STANDING PORTION)

The invention claimed is:

1. A casing of an outdoor unit in an air conditioning device, the casing comprising:

support pillars, each of the support pillars having standing wall portions arranged along the up and down direction; and

a top plate mounted on upper ends of the support pillars, wherein

substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower

surface of a planar portion of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars,

buffer portions for buffering an impact received from the top plate side are provided between the standing wall portions and the abutment portions, and

the buffer portions are curved border portions extending from the standing wall portions to the abutment portions, the border portions and the abutment portions being configured such that the abutment portions are elastically deformable in a vertical direction.

2. A casing of an outdoor unit in an air conditioning device, the casing comprising:

support pillars, each of the support pillars having standing wall portions arranged along the up and down direction; and

a top plate mounted on upper ends of the support pillars, wherein

substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower surface of a planar portion of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars,

each of the support pillars has two standing wall portions arranged to match a corner portion of the top plate,

the abutment portions extend from the two standing wall portions,

buffer portions for buffering an impact received from the top plate side are provided between the standing wall portions and the abutment portions, and

the buffer portions are curved border portions extending from the standing wall portions to the abutment portions, the border portions and the abutment portions being configured such that the abutment portions are elastically deformable in a vertical direction.

3. A casing of an outdoor unit in an air conditioning device, the casing comprising:

support pillars, each of the support pillars having standing wall portions arranged along the up and down direction; and

a top plate mounted on upper ends of the support pillars, wherein

substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower surface of a planar portion of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars,

each of the support pillars has four standing wall portions arranged in a substantially square form in a plan view,

two standing wall portions among the standing wall portions are arranged in a corner portion of the top plate,

the abutment portions extend from the two standing wall portions arranged to match the corner portion of the top plate,

buffer portions for buffering an impact received from the top plate side are provided between the standing wall portions and the abutment portions, and

the buffer portions are curved border portions extending from the standing wall portions to the abutment portions, the border portions and the abutment portions being configured such that the abutment portions are elastically deformable in a vertical direction.

4. A casing of an outdoor unit in an air conditioning device, the casing comprising:

support pillars, each of the support pillars having standing wall portions arranged along the up and down direction; and

a top plate mounted on upper ends of the support pillars, wherein

substantially horizontal abutment portions extending upward from at least a part of the standing wall portions and being brought into surface contact with a lower surface of the top plate in a state where the top plate is floated up from upper ends of the standing wall portions are provided in the upper end of each of the support pillars,

the top plate is formed in a square shape in a plan view,

a flat mount portion is formed in the corner portion of the top plate,

regarding each of sides of the top plate, an intermediate part excluding the corner portion serves as a retreat portion set back to the device side,

an end of the retreat portion and the mount portion are connected by a standing portion,

the abutment portions of each of the support pillars are in surface contact with a lower surface of a planar portion of the mount portion,

buffer portions for buffering an impact received from the top plate side are provided between the standing wall portions and the abutment portions, and

the buffer portions are curved border portions extending from the standing wall portions to the abutment portions, the border portions and the abutment portions being configured such that the abutment portions are elastically deformable in a vertical direction.

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